



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No. : 10/630,612

**Applicant :** Norihiko Furuta

**Filed** : July 30, 2003

Title : HOSE WITH  
CORRUGATED  
METAL TUBE

TC/A.U. : 3752

Examiner : James F. Hook

Docket No. : 488-00057

) CERTIFICATE OF MAILING  
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) Barbara A. Johnson 10-18-05  
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DECLARATION PURSUANT TO 37 CFR §1.132

I, Norihiko Furuta, declare as follows:

1. I am the named inventor in the above identified U.S. patent application.
2. In this application, pending claims 1 and 4, and new claim 12 each recites reinforcing filament members that are "braided at a low braid angle, 40° or lower" with respect to the hose axis (claims 1 and 12), or a braid angle "between 15 degrees and 40 degrees" (claim 4).
3. My choice of the recited low braid angle was not an obvious choice of mechanical expedients, but rather was chosen to solve a particular problem in the construction of this hose.
4. If the corrugated metal tube 22 of the hose is made of stainless steel, for example, with a wall thickness of 0.15 mm and a pitch or distance between adjacent corrugations 30 of 1.0 mm, the axial elongation of the corrugated metal tube is preferably maintained at 5% or less in order to prevent metal fatigue of the tube caused by repeated

axial expansion of the hose under pressure. This feature is described in detail in the paragraph on page 8, beginning in line 32, and continuing on page 9 to line 11.

5. It has been found, in particular, that a braid angle of 36° results in only minimal axial elongation of the hose, including the corrugated metal tube 22, thereby solving the problem of possible fatigue failure as a result of repeated internal pressurization of the hose.

6. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or patent issued thereon.

Signed this 18 th day of October, 2005.

Norihiko Furuta  
Norihiko Furuta